GSM / GPRS / GPS VEHICLE TRACKER XT-008

Preface

Thank you for purchasing GPS Vehicle Tracker. This manual shows how to operate the device smoothly and correctly. Make sure to read this manual carefully before using this product. Please note that specification and information are subject to changes without prior notice in this manual. Any change will be integrated in the latest release. The manufacturer assumes no responsibility for any errors or omissions in this document.

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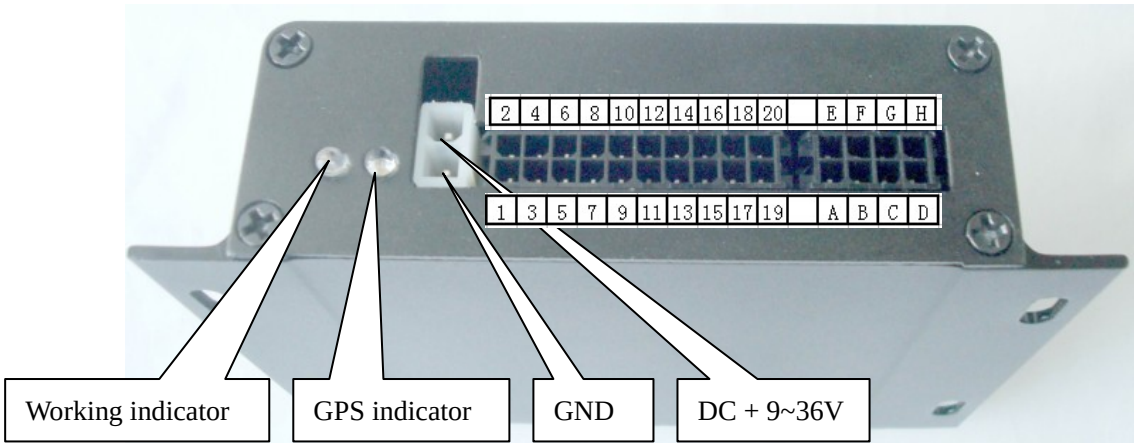
1. Overview and applications

Working based on existing GSM/GPRS network and GPS satellites, this product can locate and monitor any remote targets by SMS or GPRS, and guard against theft of vehicle.

Applications:

- Rental vehicle / fleet management etc
- Covert tracking

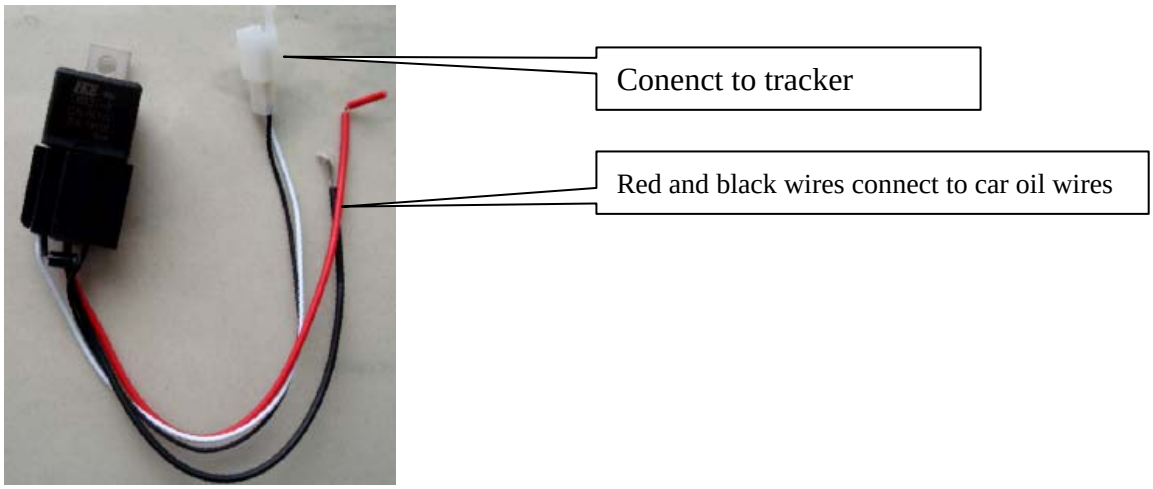
2. Hardware description



1. SP –: Speaker wire
2. SP +: Speaker wire
3. MIC + : Microphone “+”
4. MIC - : Microphone “-”
5. SOS GND : SOS GND
6. SOS+: SOS “+”
7. Oil test: connect to black wire of fuel sensor. (Note: Please use our fuel sensor only)
8. ACC(digital output): connect to ACC wire
9. V +: connect to relay directly
10. Output(digital output): connect to the extra relays (Reserved)
11. Temperature test(analog input): connect to temperature sensor
12. Cut oil(digital output) :connect to relay directly
13. Out A(digital output): connect to extra relay (Reserved)
14. RFID(digital output) : connect to RFID voice wire
15. IO6 in (digital input) : Reserved
16. IO5 in (digital input) : Reserved
17. IO4 in (digital input) : Reserved
18. IO3 in (digital input): Reserved
19. IO2 in (digital input): Reserved
20. IO1 in (digital input): Reserved

Two UART ports use for data output or input, such as camera, RFID device
UART1 (A.GND B.RX C. TX D.+5V)
UART 2 (E.GND F.RX G..TX H.+5V)

Relay connection



3. Specification

Content	Specs.
Dimension.	8.2x8.2x2.8cm
Weight	195g
Network	GSM/GPRS
Band	GSM 850/ 900/1800/1900Mhz
GPS chip	SIRF3 chip

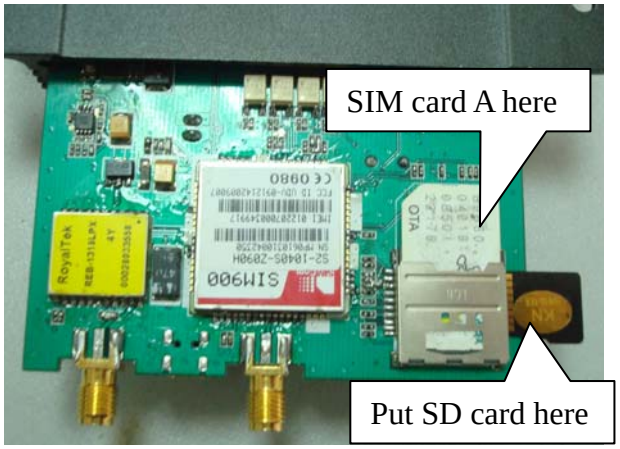
GPS sensitivity	-159dBm
GPS accuracy	5m
Time To First Fix	Reacquisition 0.1s Cold status 45s Warm status 35s Hot status 1s
Power	9—36V input
Battery	Chargeable changeable 3.7V 1100mAh Li-ion battery
Standby	50hous
Storage Temp.	-40°C to +85°C
Operation Temp.	-20°C to +55°C
Humidity	5%--95% non-condensing

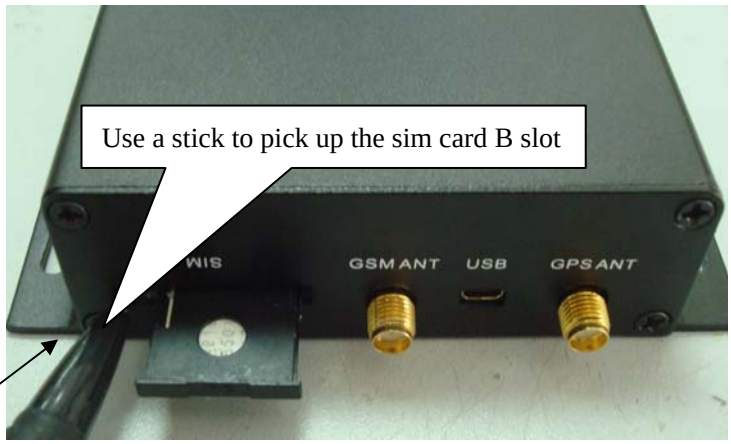
4. SIM card and SD card installation

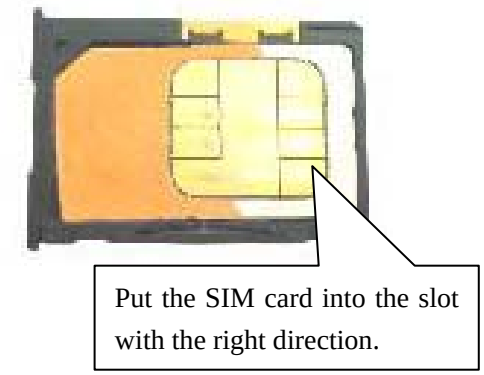
Make sure that there is no call transfer and call display is on, and PIN code off. The SMS message must in Text format, can't be identified for PDU format.

Steps:

- Open the rear cover, insert a SIM card to the simcard slot A. (If using one sim card,do not insert to sim card slot A since the default sim card is sim card B)
- Insert the SD card
- Use a stick to pick up the simcard slot B,insert the sim card B.







5. Start up

- Put SIM card and SD card in right places.
- After you insert B sim card slot 10 seconds, the red led light will blink quickly , if you remove B sim card slot , tracker will stop blink and work.
- Supply power from car, the red indicator inside of tracker will be on after connect to 9-36 V car battery.
- It takes 40-60 seconds get GPS and GSM signals and begins to work.The red indicator blinks every 1 second,the blue GPS indicator blinks every 3 seconds.
- When blue led light blinks normally, then you can do the following Settings.

6. Modes switch

This product has four operate modes: fortify, tracker, talk and monitor, they can switch to each other.
After start up, default state is tracker mode

- Send SMS <**fortify + password**> swith to fortifying mode，
- Send SMS <**monitor + password**> switch to monitoring mode
- Send SMS <**talk + password** >switch to talking mode
- Send SMS <**tracker + password**> switch to tracking mode.

7. Fortify mode

In fortifying mode, you can call tracker to activate protection for your car or vehicle. The indicator will flash one time every 4 seconds when protection is active.
Protection will be deactivated when you call tracker again, indicator will flash one time every 1 second when deactivation is done.
Note: You cannot activate protection for your car while ACC is connected.
In fotify mode, if you dial up the tracker, it will do not send SMS to the cell phone.

7.1. Fortify mode checking

Send SMS **<fortified+password>** to check the tracker status, it will get SMS “fortify “ or “ no fortify”

No fortify SMS format:
lat: 22.567908N long: 114.051395E speed: 0.00 05/01/11 04:47 F:3.87V,0, Signal:F no fortify imei:354776036842240 05 130.8 460 01 9523 29062, Oil=100%,T=40,RFID=3333333

Fortify SMS format:
lat: 22.567908N long: 114.051395E speed: 0.00 05/01/11 04:47 F:3.87V,0, Signal:F fortify imei:354776036842240 05 130.8 460 01 9523 29062, Oil=100%,T=40,RFID=3333333

7.2. Engine started alert

In fortifying mode, the tracker will start the ACC examine automatically. It will warn up the user when the engine is started.

Alert SMS format:
lat: 22.567908N long: 114.051395E speed: 0.00 05/01/11 04:47 F:3.87V,0, Signal:F fortify imei:354776036842240 05 130.8 460 01 9523 29062, Oil=100%,T=40,RFID=3333333

7.3. Movement alert

This function is using for the owner to get an alert when the tracker moves out of a restricted district (500m radius)

Alert SMS format:
lat: 22.567908N long: 114.051395E speed: 0.00 05/01/11 04:47 F:3.87V,0, Signal:F moved imei:354776036842240 05 130.8 460 01 9523 29062, Oil=100%,T=40,RFID=3333333

7.4. Power cut-off alert

The tracker will warn up the user automatically when the main power is cut off unwontedly.

Alert SMS format:
lat: 22.567908N long: 114.051395E speed: 0.00 05/01/11 04:47 F:3.87V,0, Signal:F battery imei:354776036842240 05 130.8 460 01 9523 29062, Oil=100%,T=40,RFID=3333333

7.5. Remote oil & electricity cut-off function

This function is using for the car owner to send a SMS remotely to stop a moving vehicle.

- Send SMS **<powercar+password+space+11>**, tracker disconnects the oil and electricity and cut the engine, car stops slowly and you will get SMS powercar ok.
- Send SMS **<powercar+password+space+00>**， tracker connects the oil and electricity, the engine will be restore,you will get SMS powercar ok.

7.6. Extra relays usage

Send below SMS to control the extra relays.

- **<relaya+password+space+0/1>,** control the OC output of wire A, 0 is the output low voltage ,1 is the output high voltage
- <**output+password+space+0/1/101/010**>, control the OC output of the output wire, 0 is the output low voltage level ,1 is the output high voltage ,101 means high-low-high voltage, the interval is 1 second, 010 means low-high-low, the inteval is 1 second as well, can be used for car door open

7.7. Digital input usage

There are 6 digital input are available, you may use it to detect the car door or car trunk
15. IO6 in (digital input port): connect to the car door or car trunk wires

16 .IO5 in (digital input port): connect to the car door or car trunk wires
17.IO4 in (digital input port): connect to the car door or car trunk wires
18.IO3 in (digital input port): connect to the car door or car trunk wires
19.IO2 in (digital input port) : connect to the car door or car trunk wires
20.IO1 in (digital input port) : connect to the car door or car trunk wires

Alert SMS format (1):
lat: 22.567908N long: 114.051395E speed: 0.00 05/01/11 04:47 F:3.87V,0, Signal:F Trigger6Start imei:354776036842240 05 130.8 460 01 9523 29062, Oil=100%,T=40,RFID=3333333

Alert SMS format(2):
lat: 22.567908N long: 114.051395E speed: 0.00 05/01/11 04:47 F:3.87V,0, Signal:F Trigger6Stop imei:354776036842240 05 130.8 460 01 9523 29062, Oil=100%,T=40,RFID=3333333

Note: Trigger6Stop is low voltage, Trigger6Start is high voltage, 6 means IO6 in.

8. Tracking mode

8.1. Initialization

Send SMS <**begin+password**>, it will reply " begin ok" and initialize all the settings.
(default password 123456)

8.2. Change the password

Send SMS <**password+old password+space+new password**> to change the password.

8.3. Authorization number

- Send SMS <**admin+ password+space+cell phone number**> to set the first authorized number, the other authorized numbers should be set by the first authorized number.
- Send SMS<**noadmin+password+space+authorized number**> to cancel the authorized number.
- When an authorized number send sms or dials up the unit, it will reply a SMS.

SMS format:

Lat: 22.566901 long: 114.051258 speed: 0.00 14/08/09 06.54 F:3.85V,1,Signal:F imei:354776031555474 05 43.5 460 01 2533 720B, Oil=80%,T=40,RFID=3333333

Lat: 22.566901	GPS received latitude
long: 114.051258	GPS received longitude
speed: 0.00	GPS received speed
14/08/09	GPS received data
06.54	GPS received time
F:3.85V	battery voltage

1	“1” in charge, “0” no charge
Signal:F	“F” GPS fix, “L” no GPS fix
imei:354776031555474	GSM radio imei number
05	GPS satellite fixed number
43.5	GPS received altitude
460	Mobile Country Code
01	Mobile Network Code
2533	Mobile Network Code
720B	GSM cell identities
Oil=80%	Fuel status
T=40	Temperature
RFID=3333333	RFID

8.4. Auto-track

This function ask tracker to send user SMS with Geo-info in a certain period of time.

- Send SMS **<t030s005n+password>**, it will report the Geo-info at 30s intervals for 5 times.
  You will receive a reply as “T030S005N ok!” if it set successfully.

- Send SMS <**t030s***n+password**>, it will reply SMS heaps of times.
  You will receive a reply as “t030s***n OK”

- Send SMS<**notn+password**> to cancel auto tracking .

Note: interval between SMS must not be less than 5s.

8.5. Tlimit function

- Send SMS <**tlimit+password+space+meters**>, minimum is 1m, maximum is 6000m, you will receive a reply as “tlimit ok!” if it set successfully.
  Note: this command should work along with auto tracking command

  Once set up this function, tracker will only send coordinates if the moving distance is not less than the restricted distance in each interval, otherwise, it will not send new coordinates.

- Send SMS<**tlimit+password+space+0**> to cancel tlimit function

8.6. Geo-fence

Set up a geo-fence for the unit to restrict its movement within a district. The unit will send message to the authorized numbers when it moves out of the district.

Notes: This function will be invalid if the unit moves outside the district. You need to re-set it if you want this function again.

- Send SMS <**stockade+password+space+longitude,latitude;longitude,latitude**> to set the restricted district.

The first longitude&latitude is coordinate of the top left corner of the Geo-fence, while the second longitude&latitude is the coordinate of the bottom right corner.

- Send SMS <**nostockade+password**> to cancel this function.
- It will alarm one time in each setting and will be invalid if the unit moves outside the district

SMS format:
lat: 22.566923 long: 114.051331 speed: 0.00 28/11/10 03:33 F:4.32V,0, Signal:F stockade
imei:359587011016261 05 41.5 460 01 2533 720B
Oil=80%,T=40,RFID=3333333

8.7. Movement alert

This function is using for the owner to get alarm when the tracker moves out of a restricted district.

- Send SMS<**move+password**> to set the movement alert. tracker will reply “move ok!” if it set successfully.
- Send SMS< **nomove+password**> to cancel this function
- This function will be out of effect after the unit moves outside the district and it will alarm one time in each setting.

SMS format: lat: 22.566923 long: 114.051331 speed: 0.00 28/11/10 03:33 F:4.32V,0, Signal:F move
imei:359587011016261 05 41.5 460 01 2533 720B
Oil=80%,T=40,RFID=3333333

8.8. Overspeed alert

This function is using for the owner to control the target’s speed.

- Send SMS<**speed+password+space+speed**> to the unit to set the speed alert.
- Send SMS <**nospeed+password**> to cancel this function
- The tracker will check the speed in 1 minute interval and alarm if it is overspeed.

Alert SMS format:
lat: 22.566923 long: 114.051331 speed: 0.00 28/11/10 03:33 F:4.32V,0, Signal:F speed
imei:359587011016261 05 41.5 460 01 2533 720B
Oil=80%,T=40,RFID=3333333

8.9. IMEI checking

Send SMS <**imei+password**> to the unit to check the tracker’s IMEI number

8.10. Time zone

Send SMS<**time+space+zone+password +space+GMT time**> to the unit to set the time of traker.
Note: if GMT time is “+”, just write the number. if it is “-“, you need to write “-“ before the number.

8.11. SOS button

Press SOS button 3 seconds, tracker will send alert sms to all the authorized numbers one time.

Alarm SMS format:
lat: 22.567908N long: 114.051395E speed: 0.00 05/01/11 04:47 F:3.87V,0, Signal:F help me imei:354776036842240 05 130.8 460 01 9523 29062, Oil=80%,T=40,RFID=3333333

8.12. Google map link

- Send SMS <**smslinkone+password**> to the unit to get one google map link
  The position can be checked directly on smartphone (with GPRS enabled)

SMS Format：
http://maps.google.com/maps?f=q&hl=en&q=22.567610,114.051227&speed: 0.00 12/11/10 14:36 F:4.22V Signal:F imei:012207000691839

- Send SMS <**smslink+password**> switch to smslink message.
  It will reply “smslink OK!”

- Send SMS <**smstext+password**> switch to text message.
  It will reply “smstext OK!”
- Send SMS <**smsone+password**>to the unit. the tracker will reply coordinates by SMS to authorized number or by GPRS to server

8.13. Low battery alert

When the backup battery is less than 3.7 V, it will send low battery alert to admin number

8.14. SMS center

- Send SMS <**adminsms+password+space+cell phone number**> to setup the SMS center.
  The tracker will reply Geo-info & authorized number to sms center number even if the admin numbers call or send command to the tracker
- Send SMS <**noadminsms+password** >to cancel the SMS center

8.15. GSM ID

There is GSM ID info in each SMS and GPRS data. Tracker’s location can be found according to GSM ID in case of no GPS signal. GSM ID is make up from MCC (Mobile Country Code), MNC (Mobile Network Code), LAC (Location Area Code) and Cell ID.

8.16. Motion sensor

This function is used to protect the vehicel or tracker when it is touched.

- Send SMS <**shake+password+space+1~10**> to the tracker to set up this function.
  (1-10 means the level of intensity, 1 is the least sensitivity, 10 is the most sensitivity)
- Send SMS <**shake+password+space+0**> to cancel this function.

8.17. SD card function

Save GPRS data to the SD card if GPRS is disconnected. It will send data to the server automatically if GPRS is connected again.

- Send SMS<**sdlog+password+space+1**> to tracker to activate storing data in SD card function.
- Send SMS<**sdlog+password+space+0**> to tracker to deactivate this function
- Send SMS<**readsd+password+space+1**> to ask tracker to send data stored in SD card to server using GPRS
- Send SMS<**readsd+password+space+0**> to ask tracker to stop sending data stored in SD card to server using GPRS.

8.18. SIM card A-B switch

When you insert two SIM cards into tracker, SIM card A and B are not working at the same time. Default working card is SIM card B, but you can switch between two SIM sending SMS to tracker.

- Switch SIM A to work,while SIM card B is working, send SMS <selectsim+password+A> to sim card B,
  1 minute later, SIM card A starts to works while SIM card B stop working
- Switch SIM B to work,while SIM card A is working, send SMS <selectsim+password+B> to sim card A,
  1 minute later, SIM card B starts to works while SIM card A stop working

Note: When you insert two SIM cards into tracker and working SIM card losts GSM signal, tracker will work with other SIM automatically.

9. Monitor and talking mode

- Send SMS <**monitor+password**>, tracker responds to you “monitor ok!” and switch itself into “Monitoring mode”. When you call tracker, you can hear voices and sounds around tracker.
- Send SMS<**talk+password**>, tracker responds “talk ok!”, use the round speaker , you can have two ways communication.
- Send SMS<**volume+password+space+0~99**> to adjust the volume, the grades from 0-99, from low to high level,
- Send SMS <**volume+password+space+0**> for listen in only

10. GPRS setting

If you want to use GPRS function, you need to set IP, Port and APN (access point name).
Note: Some GSM operators may request to set APN User Name and APN Password, too.

10.1. Set GPRS protocols

TCP is the default mode

- Send SMS <gprsmode+password+space+0> to set up TCP protocol, tracker responds “GPRSMODE ok!”

- Send SMS <gprsmode+password+space+1> to set up UDP protocol, tracker responds “GPRSMODE ok!”

10.2. Set IP and port

- Send SMS <**adminip+password+space+IP +space+port**> to the unit to set IP and Port.
  tracker responds “adminip ok” if set up successfully
- Send SMS <**noadminip+password**> switch to SMS mode.
- Old IP and Port will be deleted automatically when you set a new IP and Port.

10.3. Set APN,APN User,APN’s passoword

Set up APN

- Send SMS <**APN+password+space+B card APN content+space+ A card APN content** > to set the APN
  If setup successful, the tracker will reply SMS “APN ok”.
  Note: if use sim card B only, then no need to set sim card A APN content
- The old APN will be invalid automatically when a new APN is set.

Set up APN user

- Send SMS <**apnuser+password+space+B card APN user content+ space +A card APN user content**> the tracker will reply SMS “APNUSER OK!”
  Note: if use B card only, then no need to set A card APN user content
- The old APN user name will be invalid automatically when a new APN user name is set.

Set up APN’s password

- Send SMS<**APNPASSWD+password+space+B card APN password content+ space +A card APN password content**> the tracker will reply SMS”APNPASSWD OK”.
  Note: if use B card only, then no need to set A card APN password content
- The old APN password will be invalid automatically when a new APN password is set.

10.4. GPRS data format

GPRS data format: serial number+the authorized number+GPRMC data+GPS signal+alarm information+ imei number+ satellite number+altitude+battery power+charging state+byte number+checksum+MCC+ MNC+LAC+ Cell ID+ Oil+ temperature+RFID number

For example：
100312033421,13145826175,GPRMC,033421.851,A,2234.0209,N,11403.0733,E,1.87,347.73,120310,,,A*62,F ,help me, imei:354776036842240,03,73.5,F:4.14V,0,138,46772,460,01,2533,720B
Oil=80%,T=40,RFID=3333333

11. Camera usage

- Connect camera to the tracker (see page16), it must insert a 1G SD card for storage pictures.
- Set up authorization number, the authorized number must have MMS function
- Send SMS <**mmsset+password+space+apn+space+ip+space+port+space+mms center>**
  For example:
  mmsset123456 CMWAP 10.0.0.172 80 mmsc.monternet.com (this is mms settings in china)
- Send SMS <**mms+password+interval time+ photo number**> to ask tracker to take photos

For example: mms123456 120 5
120 means interval time,it cann't less than 60second, 5 is the photo numbers.

- Send SMS <**mms+password+interval time+ 999**> to take unlimited photos.

12. RFID usage

- Connect the RFID device to the tracker (see page 16)
- Brown wire connect to the purple wire of tracker.
- If wire connection is correctly, the RFID device Led light will be on and when the card/tag close to the RFID device will ring once.

- Send SMS<**rfidadd+password+ IC card number**> to set a authoriz IC card.
  Can be set 10 authorized IC card.
- Send SMS <**rfiddel +password+ IC card number**> to delete an authorized IC card.
- Send SMS<**rfidlist+password**> to check the authorized IC card number.
- Send SMS<**rfid+password+0/1**> to turn on/off the RFID function
  1 means turn on RFID function, 0 mean turn off RFID function.
- Send SMS<**rfidsec+password**> to check the RFID device working status.
  It will reply " rfid on " or " rfid off "

13. Cautions

Please comply with the instructions to extend the unit life:
1. Keep the unit dry. Any liquid, i.e. rain, moisture, may destroy or damage the inside circuitry.
2. Don't use & store the unit in dusty places.
3. Don't put the unit in overheated or overcooled places.
4. Handle carefully. Don't vibrate or shake it violently.
5. Clear the unit with a piece of dry cloth. Don't clean in chemicals, detergent.
6. Don't paint the unit, this may cause some foreign materials left in between the parts.
7. Don't disassemble or refit the unit.
8. Please use the battery and charger provided by manufacturer. Using other batteries and chargers will cause unwanted situation.
9. Don't dismount the antenna randomly, or use other antennas. This may interfere the transmission, and increase the radiation as well.

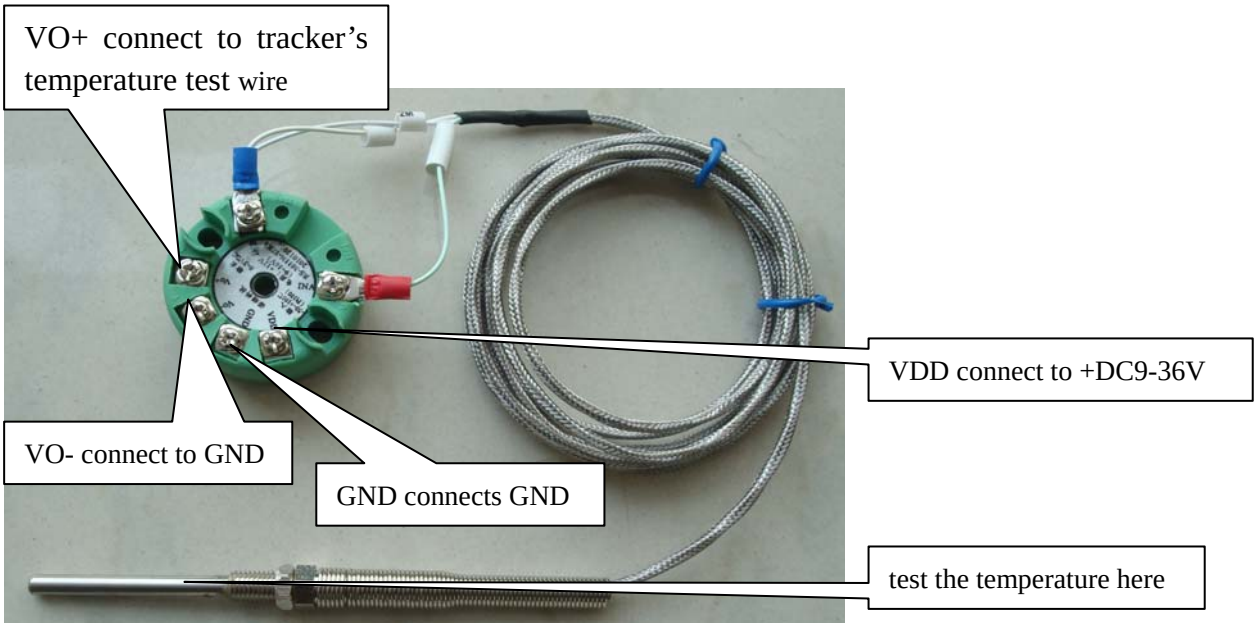
14. Faults & Solutions

Faults	Solution
Startup Fail	Check the SIM and see if it is fully charged or correctly installed.
Hangup Fail	Check if the unit received GPS signal or not,or if the SIM card there is calling display or not.
Monitor Fail	Check if the authorized number is setup or in the coverage of signals.
Location report in digits of zeros.	Don't use it in the place beyond reach of signals. Place the unit outdoors, especially when starting it up.

15. Accessories diagram

Fuel sensor diagram

The temperature sensor diagram


VO+ connect to tracker's temperature test wire
VDD connect to +DC9-36V
VO- connect to GND
GND connects GND
test the temperature here

Camera Connection

RFID Device Connection